PEDIATRICS

UNDER THE CHARGE OF

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Acute Infectious and Contagious Diseases in Childhood in the Etiology of Cardiovascular Disease in the Adult.—SIEGEL (*Arch. Pediat.*, 1922, 39, 314) reviews data collected in the examination of recruits for army service. In a series of 74,130 examinations, 6034 were given detailed cardiovascular examination, and 297 were rejected as unfit because of cardiovascular abnormalities. The histories of the last group were taken with special attention to determining the occurrence of measles, pertussis, scarlet fever, diphtheria, rheumatism, chorea, tonsillitis, growing pains, typhoid fever, dysentery, pneumonia, malaria and syphilis. The cardiovascular abnormalities found in the 297 cases rejected occurred as follows: Hyperthyroidism in 99 cases; combined valvular lesions in 61; functional cardiac disorder in 47; mitral stenosis in 35; mitral insufficiency in 20; aortic insufficiency in 10; cardiac hypertrophy in 10; tachycardia, auricular fibrillation, and aortic syphilis in 4 each; bradycardia, auricular flutter, and congenital heart lesion in 1 each. The etiological factors giving rise to these lesions follow in the order of frequency of incidence: Measles in 61.6 per cent; pertussis in 41.75 per cent; rheumatism in 41.4 per cent; tonsillitis in 36.4 per cent; growing pains in 25.3 per cent; pneumonia in 17.8 per cent; typhoid fever in 16.2 per cent; there was no history obtainable in 14.1 per cent; scarlet fever in 12.8 per cent; diphtheria in 11.9 per cent; dysentery in 11.1 per cent; and chorea in 5.4 per cent. It seemed that diseases causing the gravest constitutional symptoms in this series showed a lower incidence of cardiovascular damage than those in which the constitutional reaction was milder, and in which the patient is either ambulant or in bed for comparatively a short period. This would seem to indicate the danger to the circulatory apparatus following an infectious disease and should emphasize the need of keeping children, ill with these diseases, at rest not only during the period of the acute attack, but also in the post-acute stage, until the circulatory system has returned to its normal state. This should considerably aid in the avoidance of permanent damage to the circulatory system.

Results of Active Immunization with Diphtheria Toxin-antitoxin in the Public Schools of New York City.—ZINGHER (*Jour. Am. Med. Assn.*, 1922, 78, 1945) reports that the immunity response to the same mixture of toxin-antitoxin varies greatly in different groups of children. A preliminary stimulation of the tissue cells in Schick-positive children caused by repeated exposure to infection with the diphtheria bacillus seems to enable the cells to give a better response to injection of toxin-antitoxin than in other children whose cells have not been previously stimulated by such exposure. This is the case even though these exposures have been slight and have not been apparent in the form of a perceptible increase of antitoxin in the circulating blood. After a first series of toxin-antitoxin injections, the immunity responses to the second series did not follow the same inverse ratio noted between original susceptibility of the children in a school and the percentage of successfully immunized children in the same school. Three doses of toxin-antitoxin, each from 1 to 1.5 cc, injected at intervals of one week give much better immunity results than two doses of the same amount injected one week apart. A longer interval between the injection of the toxin-antitoxin has the advantage of allowing the local reaction to disappear more completely before the next injection of toxin-antitoxin is given. There may also be a better antitoxin response when the injections are given two weeks apart. At least six months should be allowed to elapse after the injections of toxin-antitoxin before the Schick retest is made to determine accurately the development of an active immunity. A second series of two or three injections of toxin-antitoxin should be given to those who have not become immune after the first series. There are a few children who fail to develop immunity after toxin-antitoxin injection even after they are given several series. In the schools reported, from 70 to 93 per cent of children were rendered immune after two series of toxin-antitoxin injections. There is practically no danger from anaphylaxis either in repeating the injections of toxin-antitoxin or in giving toxin-antitoxin after a preliminary injection of antitoxin.

The Food Requirements of Children: Fat Requirement.—HOLT and FALES (*Am. Jour. Dis. Child.*, 1922, 23, 471) say that many of the functions of fat in the diet are still subjects of debate. A certain amount of fat should be supplied to provide fat-soluble vitamin. This amount is not yet known. It may be exceedingly small, but until this is known it seems wise not to reduce the fat supply greatly lest there may be a deficiency in vitamin A. Fat probable has an important influence on mineral metabolism, especially on calcium metabolism; for the best absorption of calcium they have found it desirable to supply as much as 3 gm. of fat per kilo in the early years and as much as 2 gm. per kilo after six years. Fat is probably necessary for proper digestion and utilization of protein and on this account it seems desirable to supply as much fat as protein in the diet. Fat helps to maintain normal physical, bacteriological, and chemical conditions in the intestine. It also exerts a protective action against the irritating effects of the products of carbohydrate fermentation. A great reduction in fat in the diet increases the susceptibility to infection, especially to tuberculosis. The nursing infant receives a generous amount of fat, usually as much as 4 gm. per kilo daily. The infant taking modifications of cow's milk usually receives about 3.5 gm. per kilo daily. Older children studied by the authors took on an average over 3 gm. per kilo when under six years of age, and about 3 gm. per kilo during the remainder of the growth period. The grounds for the current impression regarding the harmful effects of fat on children should be investigated carefully. There seems to be little evidence that a liberal amount of fat in the diet is harmful to children with normal digestion and much evidence that fat is an important and necessary component of the diet during the entire growth period. In general, it seems rational to supply in the diet of the child as much as 4 gm. per kilo daily at one year, decreasing to about 3 gm. per kilo at six years, and maintaining this value throughout the remainder of the growth period.

Milk Ingestion in Relation to Changes in Body Weight of Newborn Infants.—ADAIR and STEWART (*Jour. Am. Med. Assn.*, 1922, 78, 1865) found that the average body weight for 149 first-born and also for 149 later-born infants, whose birth weights ranged between 2500 and 5000 gm., decreased to a minimum on the fourth day, counting the date of birth as the first day. The average loss amounted to approximately 8 per cent of the birth weight for the first-born infants and to approximately 6.4 per cent for the later-born infants. There was no progressively uniform daily decrease in weight; for each group the greatest loss occurred on the second day. Following the fourth day the average body weight for each group progressively increased. On the tenth day, however, the average weight of the first-born and of the later-born was still 2.4 and 2.6 per cent respectively below the initial weight. For each group of babies the greatest daily gain in weight occurred on the fifth day after birth. For the first-born infants of both sexes the amount of breast milk obtained increased rapidly from an average of 13.0 gm. per feeding on the second day to 54.9 gm. on the fifth day. From the sixth to the tenth day inclusive the increase continued, although less rapidly, the average meal on the tenth amounting to 78.4 gm. With the later-born infants of both sexes the average amount of milk per feeding increased from 16.9 gm. on the second day to 59.4 gm. by the fifth day. On the tenth day the food intake averaged 84.7 gm. per feeding. Throughout the period studied the babies of multiparous mothers averaged larger feedings than the babies of primiparous mothers. The heavier infants in general obtained more milk from the breast per feeding than the lighter ones whether first or later born, particularly after lactation was well established. Of each weight group the average meal in general was larger for infants of multiparous mothers than for those of primiparous mothers. Except for the eighth and ninth days, the average amounts of mother's milk taken daily for each kilogram of body weight was slightly higher for later-born than for first-born infants. The average amount of 10 per cent lactose solution taken per feeding increased to a maximum on the second day. On the following three days, as the supply of milk increased, the lactose solution ingested progressively decreased. There was no apparent difference in the amount of lactose solution taken during this period by the later-born as compared to the first-born babies.

Observations on the Heart in Mothers and the Newborn.—SMITH (*Jour. Am. Med. Assn.*, 1922, 79, 3) found by clinical, cardiographic and radiographic examination that pregnancy in itself does not cause cardiac enlargement. Such evidences of cardiac enlargement as may be present in the expectant mother under certain circumstances of examination are shown to disappear under other circumstances. Cardiac enlargement in the latter half of pregnancy may be simulated by the upward pressure of the gravid uterus upon the heart, causing cardiac displacement. There are no heart affections which are characteristic of, or incident to, pregnancy. While pregnancy in all likelihood throws a load of some degree on the heart, the heart is fully capable of adjusting itself to this as it is to other physiologic demands. A definite history of previous infections requires that the expectant mother be closely observed as pregnancy advances for symptoms of masked heart disease, which may not become apparent until brought to light by the heart load of pregnancy. Focal infections may cause symptoms of heart embarrassment in pregnant patients which might erroneously be attributed to pregnancy. Definite cardiac indications for the interruption of pregnancy are rare. Even frankly diseased hearts will exhibit a surprising adaptability to the physiologic demands of pregnancy. The right side of the heart is enlarged in the newborn. Evidence of cardiac enlargement persists for five weeks or longer before the baby's record begins to assume adult characteristics. The heart following birth is frequently irregular at intervals during the first week. Such irregularities may be expected to disappear at a later date and are not indicative of cardiac pathology. Graphic records suggest that it may be possible for maternal irregularities to be transmitted to the child. In a stillborn baby evidences of heart activity were observed for three hours and twenty-four minutes following stillbirth. Massage of the heart through the chest wall may prove to be a useful adjunct to other methods of resuscitation of the stillborn.

The Severe Blood Diseases of Childhood.—POYNTON, TURSFIELD and PATERSON (*Brit. Jour. Child. Dis.*, 1922, 19, 57) in discussing types of severe blood diseases take up a consideration of von Jaksch's anemia or anemia pseudoleukemica infantum. They group four of their cases under this heading. The criteria which they have adopted are that the child should be under four years of age, that the anemia should be severe, that there should be an unusual proportion of myelocytes present in the peripheral blood, and that the spleen should be of considerable size. In addition, though not invariably present, normoblasts and megaloblasts are commonly found in the films of the blood. Judged by these standards three of these four cases undoubtedly belong to the category of von Jaksch's disease, but the remaining one was doubtful. In this patient the hemoglobin was unusually high and the proportion of myelocytes was unusually low, nor had the spleen such a size as is usually associated with the disease. The erythrocyte count was higher than is expected and the improvement was exceptionally rapid. The general appearance of the patient coupled with the appearance in the blood of myelocytes, normoblasts and megaloblasts led them to believe that this was an example either of a comparatively late stage in convalescence from the disease, or possibly an example of unusually mild degree of the affection. They admit that such a case affords some support to the argument of those who believe that von Jaksch's anemia is not a clinical entity, but an unusually severe stage of any infantile anemia, the uncommon features being merely an expression of the severity of the intoxication. Of the three cases two recovered and one died. Postmortem examination showed petechiæ in many organs, an old blood-clot in the pelvis of one kidney, general moderate enlargement of the lymphatic glands and hypertrophy of lymphoid tissue of the body, and a large firm spleen with marked fibrosis.